

TEN MORE NEW SPECIES OF *LACHENALIA* (LILIACEAE)

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ABSTRACT

Ten new species of *Lachenalia* are described, and the characters of the ripe seeds are used as additional diagnostic features.

UITTREKSEL

TEN VERDERE TIEN NUWE *LACHENALIA* SOORTE (LILIACEAE)

Tien nuwe *Lachenalia* spesies word beskryf. Die eienskappe van die ryp sade word as aanvullende diagnostiese kenmerke in die genus voorgestel.

INTRODUCTION

Of the ten new species described two, *L. macgregori* and *L. margaretae* are only known from the type localities, while *L. polypodantha*, as far as is known, has a very restricted distribution. Six of the species have seeds with terminal inflated arils, while four fall into the group with terminal ridged arils, however in *L. polypodantha* the entire testa is wrinkled into an irregular pattern of ridges, a character which at present is only known to be shared by *L. polyphylla* Bak., *L. patula* Jacq. and *L. trichophylla* Bak.

Lachenalia bolusii Barker, sp. nov.

Distinguitur folio unico ovato lanceolato vel lorato plerumque marginem undulato vel crispato, basi amplexententi supra marronino fasciata basin versus magentea, pedunculo pergracili, inflorescentia racemosa laxa, floribus parvis campanulatis vel urceolatis, segmentibus externis basi pallide caeruleis, supra albis gibbosis fuscis, segmentibus internis paulo longioribus albis apicem fusco-maculatis, staminibus segmentibus internis aequantibus, seminibus globosis, arillo inflato terminale mensure medio.

Plant up to 340 mm high. *Bulb* ovate 10–20 mm diam.; outer tunics membranous, brown. *Leaf* 60–160 mm long; blade ovate-lanceolate to lorate 30–140 mm long, 7–20 mm broad near base, blue-green banded with maroon near base on lower side, margin undulate or crisped, with faint traces of papillae on margins near base; clasping base 20–120 mm long, with faint traces of papillae in the upper part and with maroon bands which shade to magenta toward the base. *Peduncle* very slender, up to 220 mm long above the clasping base, densely and

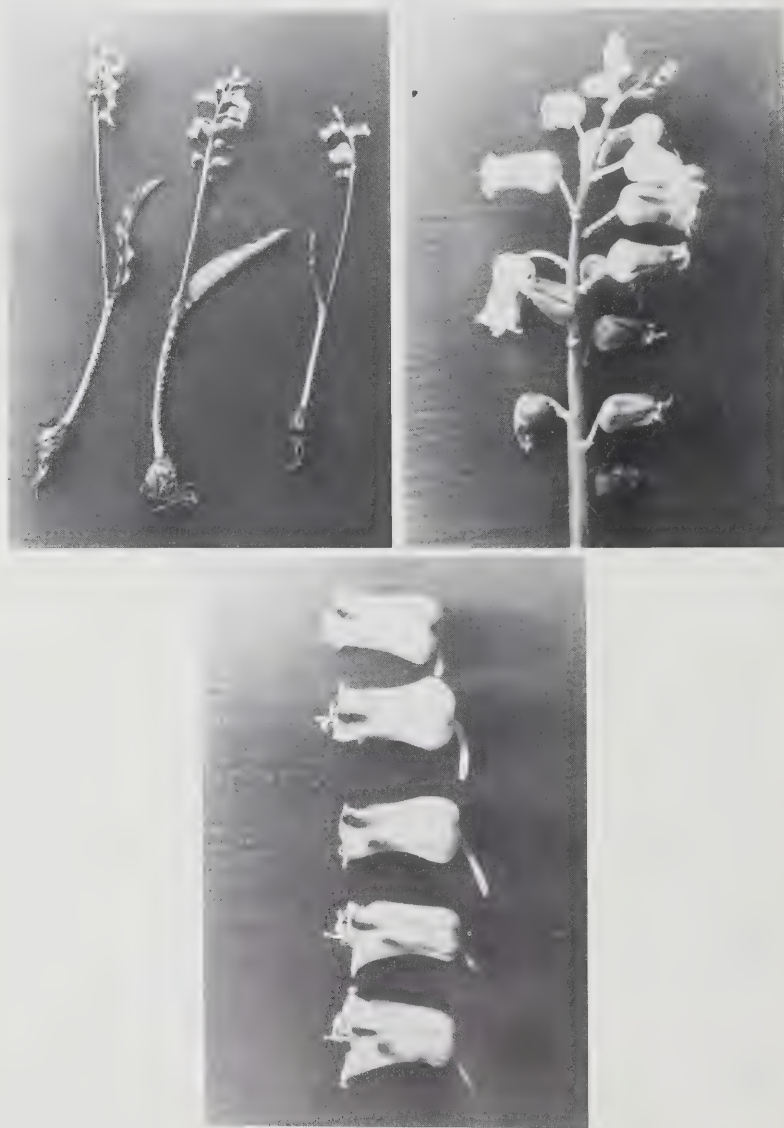


FIG. 1 a,b,c
Lachenalia bolusii: a. three plants; b. inflorescence; c. flowers. (Hall 4098).

minutely spotted or suffused with maroon. *Inflorescence* racemose very lax, usually few-flowered, up to 90 mm long and 20–30 mm diam.; pedicels up to 6 mm long; bracts ovate obtuse, membranous; flowers narrow campanulate to slightly urceolate, cernuous. *Perianth* up to 9 mm long 5 mm diam. at base; tube 2 mm long, pale blue; outer segments ovate, blue at base, white, with brownish gibbositities; inner segments a little longer than outer, obovate obtuse, white with a reddish-brown spot near apex, apex recurved; stamens as long as inner segments. *Ovary* globose 3 mm long; style 6 mm long. *Capsule* obovate 8 mm diam.; seed globose, aril inflated, terminal, medium length.

DIAGNOSTIC CHARACTERS

Lachenalia bolusii is characterised by its very slender habit, its single leaf with an ovate-lanceolate to lorate blade, and its tightly clasping banded base. The inflorescence is racemose, very lax and few-flowered, and the campanulate to urceolate flowers are cernuous, and the stamens are included. The seeds have an inflated, terminal aril.

Type Material: CAPE PROVINCE—2917 (Springbok): Klipfontein (-BA), Aug. 1883, H. Bolus 6592 (BOL, holo.; K, iso.).



FIG. 2

Lachenalia bolusii: 1. seed side view; 2. seed from above; 3. seed from below.

The affinities of this taxa have caused considerable thought and speculation. Should it be placed in the *L. unifolia* complex which already includes a number of varieties, or could it be regarded as a semi-glabrous variety of *L. hirta*, as it has vestiges of hair bases or papillae on the leaf, especially in the collections from the Bidouw Valley area.

On examination, the seeds which have a short, inflated terminal aril, were found to be distinct from those of either *L. unifolia* or *L. hirta*, which both have seeds with an almost obsolete ridged aril. It has therefore been described as new, and named after Dr. H. Bolus.

The distribution of *L. bolusii* is along the mountains from Clanwilliam to Namaqualand, and its habitat the rocky mountain slopes. Its flowering time is during August and September.

After unusually good rains in 1977, the first records of the species were made from the Richtersveld in September, on an expedition to the region by Oliver, Tölken and Venter. Unlike stunted plants usually associated with the Richtersveld, these specimens were tall, and similar to those from the more southern localities.

SPECIMENS EXAMINED

- CAPE PROVINCE—2816 (Oranjemund): Kodaspiek N. Richtersveld (-BB), 9/1977, *Oliver, Tölken and Venter* 429 (PRE).
 —2817 (Vioolsdrif): Cornellsberg in Stinkfonteinberg in Richtersveld (-CA), 9/1977, *Oliver, Tölken and Venter* 708 (PRE).
 —2917 (Springbok): Klipfontein (-BA), Aug. 1883, *H. Bolus* 6592 (BOL, holo.; K, iso.); 19/8/1971, *Hall* 4098 (NBG); Steinkopf (-BC), Aug. 1925, *Marloth* 6768 (PRE); 24/8/1959, *Barker* 9041 (NBG); Spektakel (-DA), 25/8/1941, *Barker* 1123 (NBG); 25/8/1941, *Esterhuysen* 5876 (BOL, NBG).
 —3119 (Calvinia): Top of Vanrhyns Pass (-AC), 21/8/1959, *Lewis* 5462 (NBG).
 —3219 (Wuppertal): Bidouw Berg (-AA), 26/8/1896, *Schlechter* 8689 (BOL, G, K, L, PRE, Z); 26/8/1896, *Schlechter* 8687 (BM, K); Biedouw Valley, 24/8/1967, *Thompson* 350 (PRE); Pakhuis Pass, Sept. 1933, *Leipoldt s.n.* sub. BOL 20784 (BOL); Near Pakhuis Pass, Sept. 1933, *Leipoldt s.n.* sub. (BOL).

Lachenalia latimerae Barker, sp. nov.

Distinguitur foliis 2 linearibus vel linearo-lanceolatis attenuatis supra canaliculatis flaccidis, basi laxe amplexentibus, minute magentea punctata, inflorescentia racemosa, floribus campanulatis cernuis pallide roseis vel lilacinis, segmentibus internis externis paulo brevioribus, apicibus recurvatis, staminibus exsertis, seminibus globosis, arillo jugoso terminale breve vel mensura medio.

Plant up to 280 mm high. *Bulb* globose up to 20 mm diam.; outer tunics membranous, brown. *Leaves* 1–2 very rarely 3, up to 250 mm long; blade up to 200 mm long and 20 mm broad at base, green, linear, to linear-lanceolate, attenuate channelled above, flaccid, spreading; clasping base 30–50 mm long, plain or minutely spotted with magenta. *Peduncle* short 30–40 mm long above the clasping base, minutely spotted with red-brown. *Inflorescence* racemose, many-flowered 70–170 mm long, 25–35 mm diam.; pedicels spreading, flowers cernuous; bracts minute, lanceolate. *Perianth* campanulate, up to 10 mm long, tube 2 mm long, pale pink or lilac; outer segments ovate 5 mm long, pale pink or lilac with greenish-brown gibbositities; inner segments obovate 7 mm long, 5 mm broad, with apex recurved, pale pink or lilac with a pinkish-brown spot at apex. *Stamens* exserted up to 13 mm long, white. *Ovary* ovate 2 mm long; style up to 10 mm long, white. *Capsule* obovate, membranous; seed globose, aril ridged, terminal small.

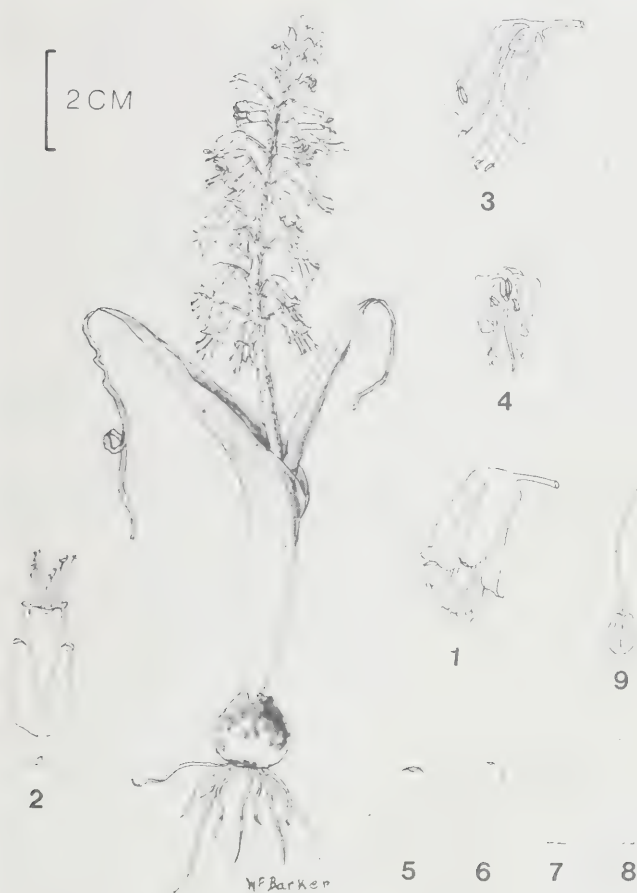


FIG. 3

Lachenalia laimerue: 1. flower side view; 2. flower from below; 3. transverse section of flower; 4. flower front view; 5. lateral outer perianth segment; 6. upper outer perianth segment; 7. lower inner perianth segment; 8. lateral inner perianth segment; 9. gynoecium, all $\times 3$. (Salter Hort. NBG 1987/1936).

DIAGNOSTIC CHARACTERS

Lachenalia latimerae is characterised by its many-flowered lax inflorescence, and campanulate, cernuous flowers with well-exserted stamens. Its two linear, attenuate, channelled, flaccid leaves are longer than the inflorescence, and its seeds belong to the group with a ridged, terminal, short or medium aril.



FIG. 4

Lachenalia latimerae: 1. seed side view; 2. seed from above; 3. seed from below.

Type Material: CAPE PROVINCE—3324 (Steytlerville): Ferndale Farm, Patensie (-DD), July 1949, *M. Courtenay-Latimer s.n.* sub. NBG 72287, Hort. NBG 1267/1948 (NBG, holo.).

In 1936 Paymaster Captain T. M. Salter collected some bulbs of a *Lachenalia* species which he presented to the National Botanic Gardens, Kirstenbosch. When they flowered on 18th August 1941, a specimen was illustrated and herbarium specimens were preserved in the Compton Herbarium. In August 1948 Miss M. Courtenay-Latimer sent in some bulbs from Ferndale Farm, Patensie which flowered in the Nursery at Kirstenbosch in July 1949. These proved to be the same species as the Cango Cave plant, and several other collections have been received from the same area, including some very fine specimens from Col. D. R. Bayliss in September 1976.

Lachenalia latimerae has an affinity with *L. juncifolia* Bak. in the shape and set of the flowers, but the two species differ markedly in the shape of their leaves, which is filiform terete in the latter.

Incomplete material of two other collections, one from near the Gouritz River and the other from Seven Weeks Poort, may eventually be found to be conspecific, and the indications are that the distribution of the species is much wider, and requires further investigation.

The species is named in honour of Dr. M. Courtenay-Latimer, recently retired Director of the East London Museum of Coelacanth fame, who for many years played an active role in the conservation of the South African flora, particularly that of the Southern and Eastern Cape.

SPECIMENS EXAMINED

CAPE PROVINCE—3322 (Oudtshoorn): near Cango Caves (-AC), 21/8/1941, *Salter s.n.* sub. NBG 72236, Hort. NBG 1987/1936 (NBG).
—3324 (Steytlerville): Ferndale Farm, Patensie (-DD), August 1948, *M. Courtenay-Latimer s.n.* sub. NBG 72422, Hort. NBG 1267/1948 (NBG); July 1949, *M. Courtenay-Latimer s.n.* sub. NBG 72287, Hort. NBG 1267/1948 (NBG); 24/9/1949 (fruiting), *G. G. Smith 7186a*, Hort. NBG 1064/1949 (NBG); 16/8/1950, *G. G. Smith 7168a*, Hort. NBG 1064/1949 (NBG); Patensie, 9/9/1976, *Bayliss 7102* (NBG).

***Lachenalia macgregori* Barker, sp. nov.**

Distinguitur foliis 2 proteranthis anguste linearibus canaliculatis cyaneis graminiformibus basi rubro-fusca suffusa maculata vel fasciata, inflorescentia racemosa, floribus patentibus late campanulatis, segmentibus externis albis, marroneis late vittatis, segmentibus internis marroneis margine pallidioribus, staminibus exsertis, filamentis expansis marroneis, seminibus globosis, arillo jugoso terminale reducto.

Plant 160–360 mm high. *Bulb* 20–25 mm diam., white with thin membranous brown tunics, and with membranous remnants of old spotted bases of the proteranthus leaves forming a short neck. *Leaves* 2 proteranthus, linear canaliculate, suberect to spreading, up to 220 mm long and 7 mm broad, blue-green without markings on the upper two-thirds, lower third suffused with pale maroon or minutely spotted or banded with red-brown, clasping bases up to 60 mm long, *Peduncle* up to 250 mm high, usually less, slender, minutely spotted with red-brown, as long or longer than the inflorescence. *Inflorescence* racemose, up to 130 mm long, sterile portion short; bracts minute, obtuse; pedicels 2–5 mm long, pale at base, maroon below the flowers, spreading. *Flowers* up to 9 mm long, widely campanulate; tube 2 mm long, white; outer segments 3–5 mm long, ovate, concave at base and slightly spreading toward the apex, white with a broad central maroon stripe, which continues halfway down the tube; inner segments 5–7 mm long, obovate, spreading slightly more than the outer, maroon, paler toward the sides. *Stamens* well exserted, up to 10 mm long, spreading, filaments maroon. *Ovary* obovate 2 mm diam., green; style 7–9 mm long, maroon. *Capsule* obovoid, narrowed at the base, 3 mm diam., membranous; seed globose, shining, aril ridged, reduced to almost absent.

DIAGNOSTIC CHARACTERS

Lachenalia macgregori belongs to a small group of species which have proteranthous leaves. In nature the leaves appear in April, and have died down completely before the flowers appear in late October or early November. The two linear, canaliculate leaves are grass-like and scarcely succulent. Its flowers are



FIG. 5

Lachenalia macgregori: a. plants in flowering stage; b. young inflorescences; c. flowers; d. leaf-bases. (Barker 9766).

distinctive in colouring, having a wide maroon stripe down the centre of the white outer segments extending on to the tube, while the inner segments are maroon, becoming paler at the sides. The species appears to be most closely to *L. pearsonii* (Glover) Barker, resembling it in the shape of the flowers and the leaves, however the latter are synanthous in *L. pearsonii*.

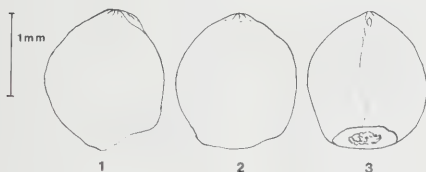


FIG. 6

Lachenalia macgregori: 1. seed side view; 2. seed from above; 3. seed from below.

Type Material: CAPE PROVINCE—3119 (Calvinia): Charles Hoek, Nieuwoudtville (-AC), 5/11/1962, *W. F. Barker 9766* (NBG, holo., iso.).

Up to the present *Lachenalia macgregori*, a most interesting and unique species, is only known from the type locality, and has only been collected there once, on 5th November 1962. With the permission of the late Mr M. Macgregor of Glen Lyon Farm, we were able to explore the area called the Klipkoppies or Charles Hoek, where we came across it somewhat unexpectedly, as it was late in the season for *Lachenalia* species, and without leaves it was very inconspicuous. Bulbs were grown for leaves, which began to appear in early April, and the bulbs have continued to produce flowers and leaves alternately ever since.

The species has been named in honour of the Macgregor family, who have farmed in the Nieuwoudtville district for several generations, and have always been practical conservationists, setting aside large portions of their farms as private reserves. They have generously enabled botanists to collect specimens for research purposes, and have allowed members of the public to view and enjoy the exceptionally varied and beautiful floral heritage, which they have preserved for posterity.

SPECIMENS EXAMINED

CAPE PROVINCE—3319 (Calvinia): Charles Hoek (Klipkoppies) Nieuwoudtville (-AC), 5/11/1962, *W. F. Barker 9766* (NBG, holo., iso.); 24/10/1967 *Barker 9766* (NBG); 27/10/1970, *Barker 9766* (NBG); (Leaves) 23/5/1970, *Barker 9766* (NBG).

***Lachenalia margaretae* Barker, sp. nov.**

Distinguitur folio unico (raro 2) flaccido lorato immaculato vel supra maculato, inflorescentia racemosa folio breviora, floribus parvis campanulatis, segmentibus externis albis gibbosis atrofuscis, segmentibus internis vix longioribus albis apicem macula ovali atrofusca, staminibus breve exsertis, seminibus globosis, arillo inflato terminale mensure medio.

Plant dwarf, up to 120 mm high. *Bulb* globose 10–15 mm diam., with soft brown outer tunics, sometimes produced into a short neck. *Leaf* 1 occasionally 2, much longer than the inflorescence, lorate; blade spreading, flaccid, up to 190 mm long and 15 mm broad, plain green or spotted with dark brown above, tinged with maroon below; clasping base up to 30 mm long. *Peduncle* short, up to 70 mm long, slender, maroon. *Inflorescence* racemose, 20–60 mm long, few to many-flowered; bracts small acute tinged maroon; pedicels short up to 3 mm long, spreading, white; flowers small spreading. *Perianth* 5–7 mm long, campanulate; tube 1–2 mm long, white; outer segments ovate 4–5 mm long, white with comparatively large globose chocolate-coloured gibbosities; inner segments scarcely longer, obovate, white with a narrow oblong chocolate-coloured spot near the apex; stamens shortly exserted 6–7 mm long. *Capsule* obovate, membranous 5 mm diam., comparatively large; seeds few, comparatively large, globose, aril inflated, terminal, medium length.

DIAGNOSTIC CHARACTERS

Lachenalia margaretae is characterised by its one (very occasionally two) long, lorate, flaccid, spreading leaf which is spotted or plain above. The inflorescence is usually much shorter than the leaf, the flowers small, white campanulate with large chocolate-coloured gibbosities on the outer segments, and narrow oblong spots on the inner segments, which are only slightly longer than the outer. Its seed falls into the group with an inflated, terminal aril.

Type Material: CAPE PROVINCE—3218 (Wuppertal): Pakhuis Pass (-AA), 19/10/1965, *Barker 10320* (NBG, holo.); 4/12/1970, *Barker 10783* (NBG, topo.); 24/10/1972, *Barker 10783* (NBG, topo.).

Lachenalia margaretae was first discovered by Mrs Margaret Thomas on 19th October, 1965, when we stopped in the Pakhuis Pass to search for the species which has now been described as *L. esterhuysenae*. *L. margaretae* was found at a somewhat lower altitude, growing in the shade of huge overhanging T.M.S. boulders, in very shallow soil, with the flaccid leaves spreading on the ground.

Up to the present it has only been found in the type locality. A second collection was made in September, 1970 when it was in leaf, and the bulbs flowered on 4th December, 1970, and again on 24th October, 1972.

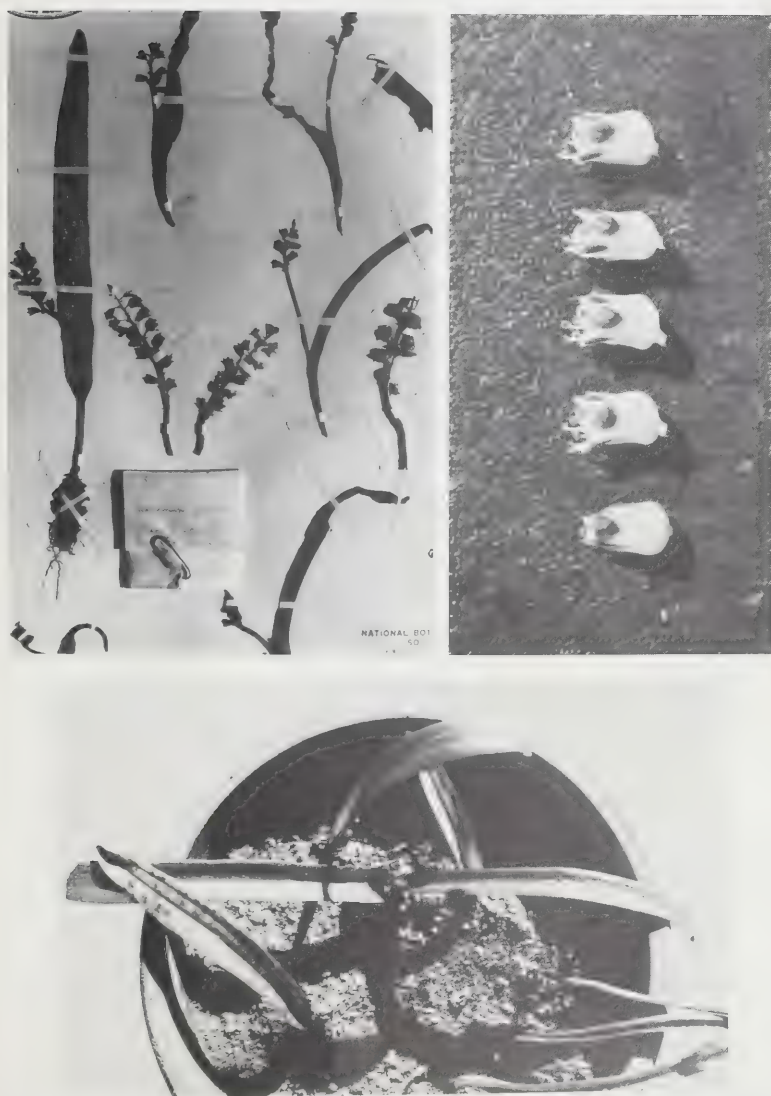


FIG. 7 a,b,c

Lachenalia margaretae: a. portion of type sheet in Compton Herbarium; b. flowers; c. leaves. (Barker 10320).

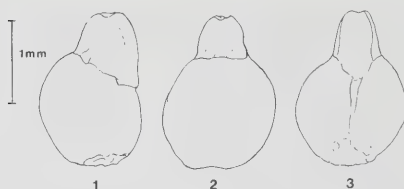


FIG. 8

Lachenalia margaretae: 1. seed side view; 2. seed from above; 3. seed from below.

The species is named in honour of Mrs Margaret Thomas, a former member of the horticultural staff at the National Botanic Gardens, Kirstenbosch, in appreciation of her invaluable assistance, in numerous ways over many years, toward my researches on the genus.

SPECIMENS EXAMINED

CAPE PROVINCE—3218 (Wuppertal): Pakhuis Pass (-AA), 19/10/1965, *Barker 10320* (NBG, holo.); 4/12/1970, *Barker 10783* (NBG, topo.); 24/10/1972, *Barker 10783* (NBG, topo.).

Lachenalia marginata Barker, sp. nov.

L. orchioides affinis, distinguitur folio unico acute ovato vel falcato, margine incrassato coriaceo undulato, basi amplexenti fasciata, pedunculo infra inflorescentiam inflato, inflorescentia spicata, floribus suberectis vel patentibus, periantho longo angusto leviter urceolato, segmentibus externis atrofuscis gibbosis, segmentibus internis longioribus, segmentis infimis superioribus longioris, staminibus inclusis, seminibus ovatis, arillo inflato terminale mensure medio.

Plant 110–300 mm high. *Bulb* globose 10–20 mm diam., outer tunics membranous, brown. *Leaf* 1, very occasionally 2; blade spreading ovate acute to falcate up to 120 mm long, 30 mm broad at base, glaucous with faint darker blotches above, margin often undulate, thickened and coriaceous; clasping base up to 90 mm long, widening above, banded with maroon, shading to magenta toward the base. *Peduncle* up to 100 mm long above the clasping base, slightly to much swollen below the inflorescence. *Inflorescence* spicate, few to many-flowered, up to 90 mm long and 40 mm diam., flowers suberect to spreading. *Perianth* narrow urceolate 15–18 mm long, 5 mm diam. near base, tube 3 mm long, pale blue-green; outer segments oblong 7–10 mm long pale blue-green at base, shading to pale yellow-green above with dark brown gibbosities; inner segments narrowly obovate, cuneate, obtuse or emarginate, the two upper lateral segments broader 12–14 mm long, overlapping, lowest narrower and distinctly longer, with a slightly upward curve, all pale yellow, pale green down the centre; stamens



FIG. 9

Lachenalia marginata: 1. flower side view; 2. flower from below; 3. transverse section of flower; 4. flower front view; 5. upper outer perianth segment; 6. lateral outer perianth segment; 7. lower inner perianth segment; 8. lateral inner perianth segment; 9. gynoecium, all $\times 2$.

included; filaments up to 15 mm long; ovary ovate oblong, 3 mm long; style 11 mm long. *Capsule* ovoid 7 mm long, membranous; seed ovate, aril inflated, terminal, of medium length.

DIAGNOSTIC CHARACTERS

Lachenalia marginata has an affinity with *L. orchoides* (L.) Ait. but differs in having one leaf with a banded clasping base and a shorter firmer blade, with a thickened coriaceous margin which is usually undulate. The mouth of the flower is narrow and the lower inner segment protrudes beyond the two lateral upper ones while the gibbositities on the outer segments are dark brown.

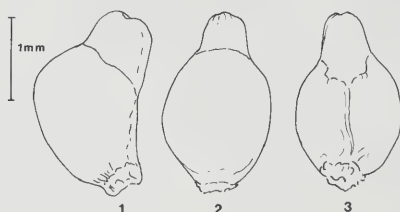


FIG. 10

Lachenalia marginata: 1. seed side view; 2. seed from above; 3. seed from below.

Type Material: CAPE PROVINCE—3119 (Calvinia): 4 m. W of Nieuwoudtville (-AC), 23/8/1950, *Barker 6463* (NBG, holo.).

The first plant of *Lachenalia marginata* to be seen, flowered at the Bolus Herbarium in June 1934 and was recorded in the accompanying painting. Unfortunately the specimen was not localised, but it has since been collected many times in sandy soil in the vicinity of Nieuwoudtville. It has also been recorded from the Matzikamma Mountain near Vanrhynsdorp, from Lorraine Farm north of Pakhuis, and as far south as Matjesrivier Farm in the Southern Cedarberg.

It falls into the large group of species having seeds with a terminal, inflated aril to which *L. orchoides* also belongs.

SPECIMENS EXAMINED

CAPE PROVINCE—3118 (Vanrhynsdorp): Matzikamma (-AB), 22/7/1940, *Martin s.n.* sub. NBG 72364, Hort. NBG 629/1938 (NBG); Klaver (-DC), 2/6/1950, *Barker 7387* (NBG).

—3119 (Calvinia): Glenridge Farm, Nieuwoudtville (-AC), 12/8/1960, *Lewis 5735* (NBG), 12/8/1961, *Barker 9433* (NBG); 23/8/1966, *Barker 10451* (NBG); 3 m W of Nieuwoudtville, July 1948, *Lewis 2408* (SAM); 23/8/1950, *Lewis 3240*

(SAM); 23/8/1950, *Barker 6465* (NBG); 4 m W of Nieuwoudtville, 23/8/1950, *Barker 6463* (NBG).

—3219 (Wuppertal): Farm Lorraine N. of Pakhuis (-AA), 23/7/1965, *Siaens s.n.* sub. NBG 84814 (NBG); Matjesrivier, Cedarberg (-AC), 26/9/1942, *Wagener 209* (NBG).

***Lachenalia martinae* Barker, sp. nov.**

Distinguitur folio unico anguste lanceolato vel lorato, margine undulato vel crispato, basi amplexenti fasciata, inflorescentia subspicata, floribus parvis patentibus vel leviter cernuis, periantho hebeti anguste urceolato, segmentibus internis externis longioribus, staminibus inclusis vel leviter exsertis, seminibus globosis, arillo inflato terminale mensure medio.

Plant up to 250 mm high. *Bulb* globose 10–20 mm diam.; outer tunics grey-brown, produced into a very short neck. *Leaf* 1, up to 120 mm long; blade suberect to spreading, narrow lanceolate to lorate, up to 100 mm long, 10–35 mm broad at base, dark green above, with longitudinal depressed veins, lower surface banded toward the centre with maroon, shading to green at the sides and apex, or sometimes entirely suffused with maroon on the entire lower surface, margins undulate or crisped; clasping base up to 50 mm long, whitish with transverse bands, maroon above shading to magenta below ground. *Peduncle* up to 160 mm long, slender, pale and minutely spotted or suffused with maroon. *Inflorescence* up to 110 mm long and 20 mm diam., subspicate, few to many-flowered, flowers spreading to slightly cernuous; pedicels 1–2 mm long; bracts with a long filiform translucent apex. *Perianth* narrow urceolate, oblong, 10–12 mm long; tube 1–2 mm long, whitish; outer segments 6 mm long, whitish, very minutely spotted with pale blue or grey, gibbosities dull greenish-brown; inner segments 9 mm long, 3.5 mm diam. at apex, shining opal-grey with dull reddish-brown zone near apex, tips slightly recurved; stamens as long as inner segments or very slightly exserted; ovary oblong, 2 mm long, bright green; style finally exserted. *Capsule* oval, membranous; seed globose, aril inflated, terminal, short.

DIAGNOSTIC CHARACTERS

Lachenalia martinae is distinguished by having a single narrow lanceolate to lorate leaf with margins undulate or crisped, and a banded clasping base. The inflorescence is subspicate, flowers small, slightly cernuous, the perianth dull-coloured, narrow urceolate, inner segments longer than the outer, and the stamens included or a little exserted. Seed globose, aril inflated, terminal, of medium length.

Type Material: CAPE PROVINCE—3218 (Clanwilliam): Alpha Farm, Olifants River Valley at Cedarberg turn off (-BD), 3/8/1937, *B. E. Martin s.n.* sub. Hort. NBG 1262/37 sub NBG 72237 (NBG, holo.).

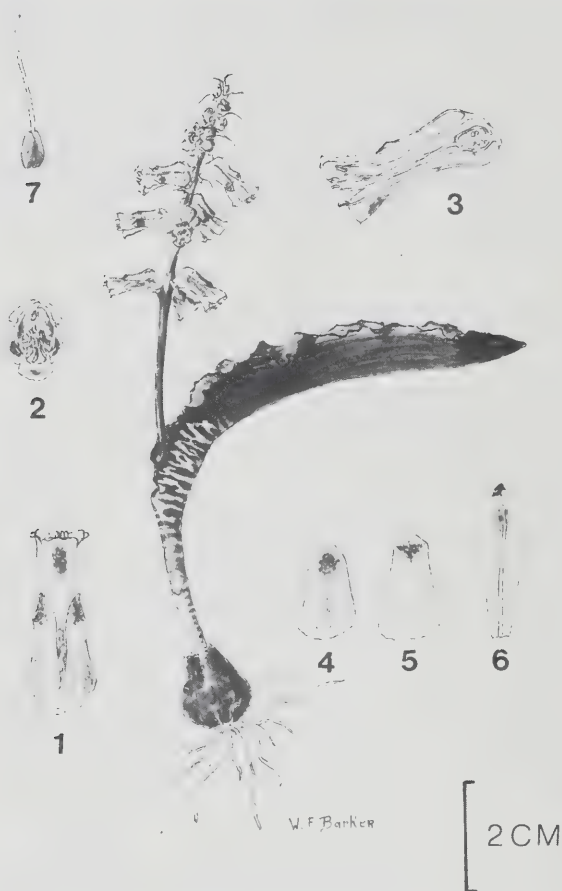


FIG. 11

Lachenalia martiniae: 1. flower from below; 2. flower front view; 3. longitudinal section of flower; 4. lateral outer perianth segment; 5. upper outer perianth segment; 6. lateral inner perianth segment; 7. gynoecium, all $\times 3$. (Martin Hort. NBG 1262/1937).

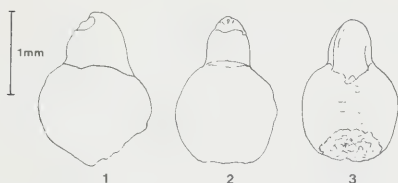


FIG. 12

Lachenalia martinae. 1. seed side view; 2. seed from above; 3. seed from below.

Lachenalia martinae has been recorded mainly from the Olifants River Valley, between Alpha Farm and Clanwilliam, but a single collection from the eastern side of the Pakhuis Pass, indicates that it may have a much wider distribution. The fact that it flowers as early as July, may be the reason why it has not been collected more often.

The species is named in honour of Miss B. E. Martin, an ardent plantswoman, who collected the type in 1937, while working at Kirstenbosch as horticulturist in charge of the bulb garden, having previously completed her horticultural training at the Dunedin Botanic Garden, New Zealand. After serving in the Middle East, Miss Martin returned to Kirstenbosch in 1945 as Secretary to the Director.

SPECIMENS EXAMINED

CAPE PROVINCE—3218 (Clanwilliam): Clanwilliam (-BB), *C. L. Leipoldt s.n.* sub. SAM 23154 (SAM); Near Clanwilliam Dam, 7/1948, *G. J. Lewis* 2421 (SAM); 7/1948, *G. J. Lewis* 2422 (SAM); Clanwilliam Dam, 7/1948, *G. J. Lewis and Davis s.n.* sub. SAM 61291 (PRE); above Clanwilliam Dam, 21/7/1977, *M. C. Botha s.n.* sub. NBG (NBG); 3 miles south of Clanwilliam, 7/1948, *D. Davis s.n.* sub. SAM 61292 (SAM); Alpha Farm, Cedarberg turn off, (-BD), 3/8/1937, *B. E. Martin s.n.* sub. Hort. NBG 1262/1937 sub. NBG 72237 (NBG). —3219 (Wuppertal); Foot of Pakhuis Pass, eastern side (-AA), 7/1948, *T. P. Stokoe s.n.* sub. SAM 61271a (SAM).

Lachenalia maximiliani Schltr. ex Barker sp. nov.

Distinguitur folio unico lanceolato immaculato, basi laxè amplexenti, inflorescentia subspicata, floribus pallidis opalescentibus suberectis vel patentibus, periantho anguste urceolato, segmentibus internis subacutis externis longioribus, staminibus segmentibus internis aequantibus, seminibus globosis, arillo jugoso breve.

Plant up to 200 mm high. *Bulb* ovate, 10–15 mm diam.; outer tunics several, leathery, dark brown, produced into a short neck; bulbils small ovate acute, usually covered with a leathery tunic, inner surface flattened, produced at the base

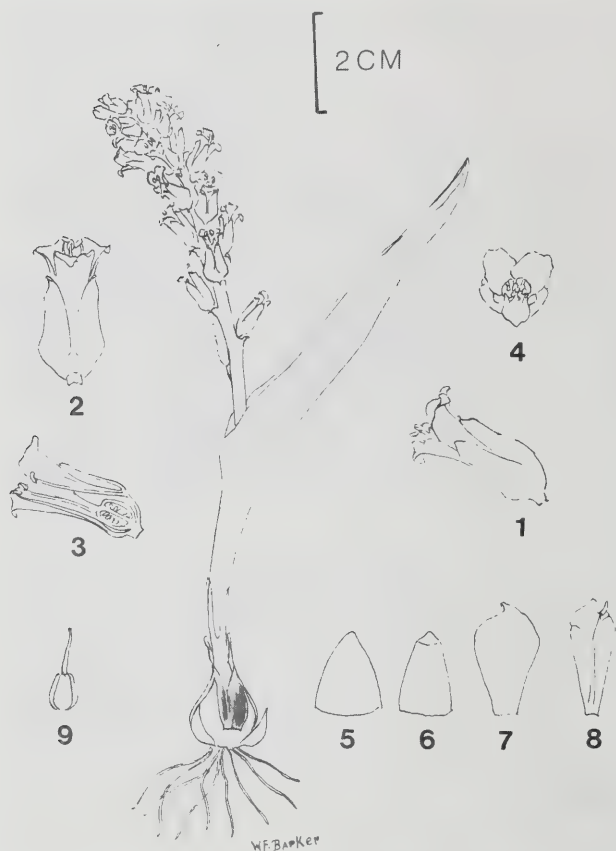


FIG. 13

Lachenalia maximiliani: 1. flower side view; 2. flower from below; 3. longitudinal section of flower; 4. flower front view; 5. lateral outer perianth segment; 6. upper outer perianth segment; 7. upper inner perianth segment; 8. lower inner perianth segment and stamen; 9. gynoecium, all $\times 3$. (Wagener 119).

of the bulb between the bulb scales. *Leaf* 1, with a loosely clasping base up to 60 mm long, widening gradually above into a lanceolate, canaliculate, yellow-green blade, 30–90 mm long and 10–30 mm broad at base, suberect to spreading. *Peduncle* slender, up to 60 mm long. *Inflorescence* few to many-flowered, up to 100 mm long and 20 mm diam., subspicate, lower flowers usually sessile, upper with a very short pedicel, suberect to spreading. *Perianth* narrow urceolate, 7–9 mm long; tube 2 mm long, very pale blue; outer segments 6 mm long, 4 mm broad, ovate, very pale blue at base, white above with reddish-brown gibbositities; inner segments 7–8 mm long, obovate oblong, subacute, white with bluish-green keels, apices recurved, lowest narrower and slightly more spreading; stamens shorter, to as long as inner segments; ovary ovate, 2 mm long; style 3–4 mm long, finally as long as stamens. *Capsule* ovate, membranous, 6 mm long; seed globose, aril ridged terminal, short.

DIAGNOSTIC CHARACTERS

Lachenalia maximiliani most closely resembles *L. fistulosa*, but differs from it in having a single plain yellow-green lanceolate, canaliculate leaf. Its compressed bulbils are produced between leathery bulb scales, and they are usually enclosed in a leathery sheath. The seeds have a ridged aril, while the aril in *L. fistulosa* is inflated.



FIG. 14

Lachenalia maximiliani: 1. seed side view; 2. seed from above; 3. seed from below.

Type Material: CAPE PROVINCE—3219 (Wuppertal): Wuppertal (-AC), 20/8/1959, *Barker* 8993 (NBG, hol.).

This dainty dwarf species was first collected by Rudolph Schlechter in August 1896, and was widely distributed by him under his manuscript name *Lachenalia maximiliani*. It usually grows on steep mountain slopes, and though somewhat inconspicuous in the field, when grown in mass it makes a charming, tidy pot plant.

SPECIMENS EXAMINED

CAPE PROVINCE—(Wuppertal): Wuppertal (-AA), 20/8/1959, *Barker* 8993 (NBG); Koudeberg near Wuppertal, 28/8/1896, *Schlechter* 8725 (BM, G, GRA,

K, L, PRE, S, Z); Pass above Wuppertal, 28/8/1951, *Martin 802* (NBG); Middelpaas, Bidouw Valley, 8/7/1941, *Leipoldt s.n.* sub. NBG 72245 (NBG); Mertenhof Farm, Bidouw Valley, 15/8/1974, *Wisura 2873* (NBG); Matjesrivier, Cedarberg, (-AD), 19/8/1943, *Wagener 119* (NBG).

***Lachenalia polypodantha* Schltr. ex Barker, sp. nov.**

Distinguitur folio unico patente ovato supra pilis stellatis vestita, basi amplectenti, pedunculo brevissimo, inflorescentia densa racemosa, floribus parvis, pedicellis longis, periantho late campanulato albo, staminibus exsertis, filamentis purpureis, seminibus ovatis acutis, testa rugosa jugis irregularibus, arillo acuto jugoso breve.

Plant up to 150 mm high. *Bulb* globose up to 15 mm diam.; outer tunics membranous, light russet. *Leaf* 1, up to 80 mm long; blade ovate up to 40 mm long, 20 mm broad, spreading, upper surface densely covered with stellate hairs; clasping base up to 50 mm long. *Peduncle* very short, 10–20 mm long above the clasping base of leaf. *Inflorescence* racemose many-flowered, up to 70 mm long,

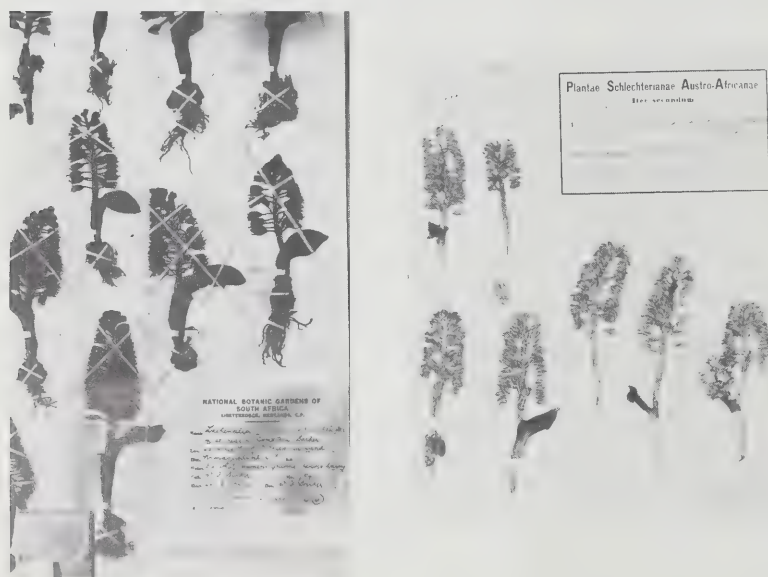


FIG. 15 a,b

Lachenalia polypodantha: a. portion of type sheet in Compton Herbarium (*Barker 9049*); b. portion of sheet in Herbarium, Royal Botanic Gardens, Kew. (*Schlechter 11384*).

30 mm diam.; pedicels spreading at right angles, 5–9 mm long, becoming shorter toward the apex of the scape. *Bracts* very small, membranous. *Perianth* widely campanulate, white, up to 7 mm long; tube 2 mm long, narrowing at the base; outer segments ovate, 4 mm long, 2.5 mm broad, obtuse, white with pale green gibbosities; inner segments 2 mm longer than outer, emarginate, white with pale green spot near apex; stamens well exserted beyond the inner segments; filaments purple; ovary obovate 3 mm long; style finally exserted beyond the stamens. *Capsule* obovate, membranous; seed very small ovate acute, the testa wrinkled into an irregular pattern of ridges; aril ridged, terminal, small.

DIAGNOSTIC CHARACTERS

Lachenalia polypodantha is a dwarf species, with a single ovate leaf densely covered with stellate hairs on the upper surface. The inflorescence is many-flowered, the pedicels spreading at right angles, becoming shorter toward the apex. The flowers are white, widely campanulate and the purple filaments are well exserted. It belongs to the small group with very small seeds, with the testa wrinkled into an irregular pattern of ridges.



FIG. 16

Lachenalia polypodantha: 1. seed side view; 2. seed from above; 3. seed from below.

Type Material: CAPE PROVINCE—2917 (Springbok): 25 m N of O'okiep (-DB), 25/8/1959, *Barker 9049* (NBG, holo.).

Only two collections of this dainty species have been recorded, both from northern Namaqualand near Springbok. Schlechter's specimens which he distributed under his manuscript name, were collected in the fruiting stage, fortunately the second collection was found in peak condition, which made identification possible. At first sight the plant is reminiscent of *L. comptonii*, both having white flowers with purple exserted stamens, and a leaf covered on the upper surface with many stellate hairs, but while in *L. comptonii* the flowers have very short pedicels, and seeds have a smooth shining surface and a short ridged aril, *L. polypodantha* has long pedicels spreading at right angles, and the seeds have a testa wrinkled all over in an irregular pattern of ridges.

They are also well separated geographically, as *L. comptonii* occurs in the inland Karoo areas from Worcester, Ceres, Laingsburg, Sutherland to Calvinia, while *L. polypodantha* is only known from Springbok in Namaqualand. Both occur in sandy areas.

SPECIMENS EXAMINED

CAPE PROVINCE—2917 (Springbok): Karoechas (-BB), 25/9/1896, *Schlechter 11384* (B, BM, GRA, K, LD, PRE, Z); 25 m N of O'okiep (-DB), 25/8/1959, *Barker 9049* (NBG).

Lachenalia stayneri Barker, sp. nov.

Distinguitur foliis 2 ovato-lanceolatis vel loratis prostratis supra pustulis magnis dispersis ornatis, pedunculo gracili, inflorescentia laxa racemosa, floribus leviter cernuis, periantho campanulato, basi truncato, segmentibus internis externis paulo longioribus, staminibus valde exsertis, seminibus globosis, arillo inflato terminate mensure medio.

Plant 120–300 mm high. *Bulb* globose 15–30 mm diam., with dark brown spongy tunics. *Leaves* 2, usually ovate-lanceolate, occasionally lorate, with a short clasping base, blade prostrate, 40–150 mm long, 15–30 mm broad, green with large scattered wart-like pustules above, sometimes tinged with maroon, lower side tinged with maroon. *Peduncle* 40–130 mm long, slender, spotted or mottled with maroon. *Inflorescence* racemose, scape spotted or tinged maroon, flowers many, lax, spreading to slightly cernuous; bracts narrow lanceolate acute, membranous, white or tinged with maroon; pedicels 2–7 mm long spreading. *Perianth* 5–8 mm long, 4–5 mm diam., campanulate; tube up to 2 mm long, very pale blue; outer segments 5–7 mm long, obovate, erect, cream with red-brown gibbositities; inner segments narrow oblong slightly longer than the outer, cream with red-brown spot near apex; stamens well exserted, up to 11 mm long declinate; ovary globose, 2–3 mm diam., green; style up to 8 mm long. *Capsule* globose 6 mm diam., membranous; seed globose, aril inflated, terminal, medium length.

DIAGNOSTIC CHARACTERS

Lachenalia stayneri is most closely allied to *L. latifolia* Tratt., in having two ovate-lanceolate prostrate leaves usually pustulate above, and flowers with well-exserted stamens, but in *L. stayneri* the inflorescence is much more lax and wider with longer pedicels, while the flowers are larger, truncate at the base, the inner segments erect and the stamens declinate. Their seeds both fall into the group with inflated, terminal arils.

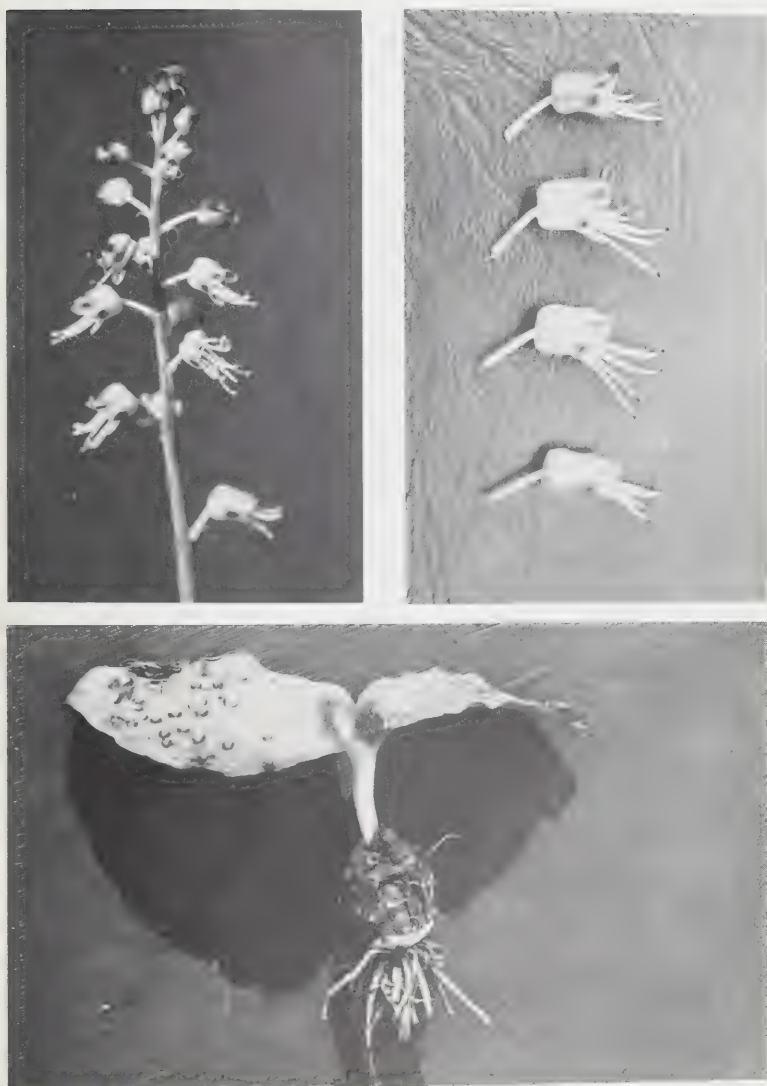


FIG. 17 a,b,c

Lachenalia stayneri: a. inflorescence; b. flowers; c. bulb in leaf. (Stayner s.n. sub NBG 88509).

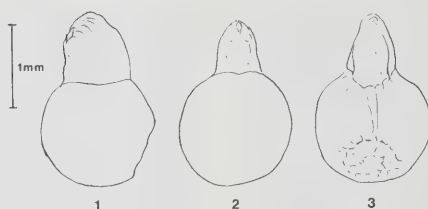


FIG. 18

Lachenalia stayneri: 1. seed side view; 2. seed from above; 3. seed from below.

Type Material: CAPE PROVINCE—3319 (Worcester): De Wet N. of Worcester (-DA), 14/8/1972, *Stayner s.n.* sub. NBG 88509 (NBG, holo.); 1/9/1971, *Stayner s.n.* sub. NBG 88509 (NBG, iso.).

The earliest record of this distinctive species, with its prostrate, pustulate leaves, was made in the Worcester Karoo Botanic Garden on 3rd September, 1947. It has since been found at De Wet and in several other localities in the Worcester district, and also near Robertson. It has been named in honour of Mr F. J. Stayner, who was Curator of the Worcester Karoo Botanic Garden for many years, and provided the Compton Herbarium with numerous interesting plants, collected on his botanical expeditions.

SPECIMENS EXAMINED

CAPE PROVINCE—3319 (Worcester): Worcester Karoo Botanic Garden (-CB), 3/9/1947, *Barker 4638* (NBG); 20/8/1953, *Compton 24119* (NBG); Veld reserve, Worcester, 28/8/1962, *M. C. Olivier 52* (NBG, UNIV STEL); De Wet N of Worcester (-DA), 11/8/1969, *Stayner s.n.* sub. NBG 88590 (NBG); 7/9/1969, *Stayner s.n.* sub. NBG 93576 (NBG, iso.); 14/8/1972, *Stayner s.n.* sub. 93908 (NBG, holo.); 1/9/1971, *Stayner s.n.* sub. NBG 93908 (NBG, iso.); 23/9/1974, *Oliver 5035* (PRE); Kweekskraal, Hex River, 8/9/1962, *Hall 2575* (NBG); Robertson (-DD), 17/9/1968, *Loubser 2121* (NBG); 31/8/1973, *Loubser 2121* (NBG).

Lachenalia ventricosa Schltr. ex Barker, sp. nov.

Distinguitur folio unico lanceolato vel lorato canaliculato viride-flavo margine undulato, basi laxae amplectenti, pedunculo infra inflorescentiam plerumque inflato, inflorescentia spicata, floribus magnis patentibus, periantho anguste urceolato basi pallide caeruleo, segmentibus externis longioribus, pallide flavis prope apicem zona viridi, staminibus valde exsertis, seminibus globosis, arilla inflato terminale longo.



FIG. 19

Lachenalia ventricosa: 1. flower side view; 2. flower from below; 3. flower front view; 4. lateral outer perianth segment; 5. upper outer perianth segment; 6. lateral inner perianth segment and stamen; 7. gynoecium, all $\times 2$. (Salter 3615).

Plant 200–480 mm high. *Bulb* globose 15–20 mm diam.; outer tunics membranous, light brown. *Leaf* 1, very occasionally 2, 190–380 mm long; blade erect to spreading, 130–260 mm long, up to 30 mm wide, lanceolate acute to lorate, canaliculate, bright yellow-green, margin usually undulate; clasping base 60–120 mm long, widening above to 15 mm diam., forming a loose sheath, whitish below shading to light purple above. *Peduncle* usually short, inflated below the inflorescence, green or suffused with red-brown, 30–140 mm long, up to 13 mm diam. below the inflorescence. *Inflorescence* spicate, 80–200 mm long, 30–40 mm diam.; flowers many, spreading; rachis inflated at base, narrowing upwards, often to a long sterile apex with many vestigial flowers, subtended by narrow lanceolate bracts. *Perianth* 12–18 mm long, narrow with an urceolate base; tube 2.5 mm long, very pale blue; outer segments up to 9 mm long, ovate, white tinged with very pale blue at base, with green to brown gibbositities; inner segments up to 15 mm long, distinctly longer than the outer, obovate, oblong, pale yellow shading to white at margin with a green zone near the apex, apex slightly spreading; stamens exserted; filaments 15–23 mm long, white; ovary oblong green, 3 mm long; style 15–17 mm long. *Capsule* oblong 8 mm long, 5 mm diam., membranous; seed globose; aril inflated, terminal, long.

DIAGNOSTIC CHARACTERS

Lachenalia ventricosa is characterised by having a single lanceolate to lorate canaliculate leaf. Its peduncle is inflated, its spicate inflorescence usually has a long sterile apex, and the large sessile, narrow urceolate flowers have well-exserted stamens and style. The seed has a long, inflated, terminal aril, similar to that of *L. orchioides*, with which it has an affinity.

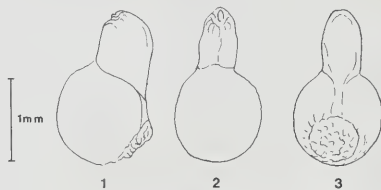


FIG. 20

Lachenalia ventricosa: 1. seed side view; 2. seed from above; 3. seed from below.

Type Material: CAPE PROVINCE—3118 (Vanrhynsdorp): Nardouw Mts (-DD), 6/9/1933, Salter 3615 (BOL, holo.; K, iso.).

The earliest collections of this species were made by Rudolph Schlechter on 3rd September, 1896, at Langkloof N.W. of Clanwilliam and on 7th September, 1897 at Brandewynrivier between the Pakhuis Pass and Doornrivier, and sets of

these collections were distributed to many herbaria under his manuscript name, which presumably refers to the swollen peduncle.

The type specimens were collected by Miss Hermione Nortier on the Nardouw plateau on 6th September, 1933 and were brought in by Paymaster Captain T. M. Salter. The accompanying figure was made from one of these wild specimens. Collections have been made in this area a number of times since, and the flowers have been consistently larger and the plants more robust than those of the Schlechter specimens.

SPECIMENS EXAMINED

CAPE PROVINCE—3118 (Vanrhynsdorp): Nardouw Mts (-DD), 6/9/1933, *Salter 3615* (BOL, holo.; K, iso.); Nardouw Pass, Sept 1947, *Lewis 2432* (SAM); Near Nardouw Pass, Sept 1945, *Lewis 1238* (SAM); Nardouw, 14/9/1947, *Barker 4746* (NBG); Nardouw, Sept. 1951, *Barker 7439* (NBG); Nardouwberg Plateau bet. Vondeling and Syferkop, 13/8/1963, *Rourke s.n.* sub. NBG 93578 (NBG); 15 m S. of Doorn River Bridge, 25/8/1950, *Barker 6564* (NBG); Lange Kloof, 3/8/1986, *Schlechter 8398* (B, BM, BOL, G, GRA, K, PRE, Z).
—3219 (Wuppertal): Brandewynrivier (-AA), 13/8/1896, *Schlechter 10827* (BM, BOL, G, GRA, K, L, LD, PRE, S, Z).

ACKNOWLEDGEMENTS

In the preparation of this paper, special thanks is due to Professor E. A. Schelpe for preparing the Latin translations.

I wish to express my thanks to all the curators of the herbaria mentioned, who have provided me with facilities or sent specimens on loan, also to the Photographic Department of the Jagger Library for the photographs of the paintings, and to the Kew Herbarium for the use of the photograph of the herbarium sheet.

My grateful thanks to all collectors and particularly to Mrs M. Thomas, Miss B. E. Martin, Dr M. Courtenay-Latimer, Mr F. J. Stayner, Mr H. Hall and Col R. Bayliss, and my sincere appreciation to the Macgregor family, and to Mr and Mrs Neil Macgregor in particular, for their generosity and co-operation over many years.